UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

April 24, 1992

Mr. Nelson Wong, P.E.
Carrier Corporation
855 Anaheim - Puente Road
P.O. Box 1234
City of Industry, California 91749

Subject: Carrier A.C. (Collierville) Feasibility Study (FS)

Dear Mr. Wong:

The following are EPA comments on the revised March 31, 1992 Feasibility Study. The Tennessee Department of Environment and Conservation has tentatively agreed with these comments, but may submit additional comments on April 20, 1992. The FS will not be approved as final until the following comments have been addressed. Please submit the Final FS no later than April 29, 1992.

Specific Comments

Executive Summary, Remedial Alternatives, Paragraph 3: Even with continued operation of Water Plant 2, the plume may be uncontained.

Executive Summary, Remedial Alternatives, Paragraph 5: The number of supplemental wells has not been determined. The number and location of wells will be determined during RD. The treated groundwater will be discharged to one of four options and will be decided during RD.

Page 1-12, Table 1-2: More recent data should appear in this table.

Page 2-6, Section 2.2.1: This section still only discusses some of the contaminants of concern.

Page 2-8, Soils/Sediment, Paragraph 3: A uniform soil level of about 533 ug/kg TCE needs to be achieved. The number for soil cleanup level should be consistent throughout the FS.

Page 2-27, Table 2-7: Preventing direct contact/ingestion with soil is no longer a remedial action objective. Table 2-7 should be revised to included prevention of contaminants migrating to the Memphis Sands.

Page 2-28, Soil Volumes, Paragraph 1: How is the shallow groundwater treated?

Page 2-28, Soil Volumes, Paragraph 2: The soil cleanup level, 533 ug/kg, should be consistent throughout the FS. Are the soil contamination levels referred to in this paragraph and in Table 2-18 in the main plant area?

Page 2-33, Section 2.5: This section contains inconsistencies between the text, screening tables, and the remedial alternatives carried forward for evaluation. Most notable was the listing of on- and offsite landfill as a final screening alternative which was not included as a remedial alternative. If the intent of the onsite landfilling option is to dispose of treated soils after they've been delisted, then it is not appropriate to use the term, onsite landfilling. The delisted soils would not be disposed of in a lined landfill with a leachate collection system; more likely, the delisted soils would simply be disposed of onsite.

Page 2-35, Table 2-9: The waste pile vapor extraction should have been eliminated because of air treatment requirements.

Page 2-44, Paragraph 2: The text for the soil washing options indicates that it has been retained for evaluation, however it is screened out in Table 2-11.

Page 2-44, Paragraph 6: The disposal of soil at an on- or offsite landfill is retained in text and Table 2-11, however it was not included as an alternative(s). The text should explain why these options were carrier forward.

Page 2-48, Table 2-10: Onsite discharge does not indicate that adequate treatment of groundwater prior to discharge to the public water supply would occur.

Page 2-48, Rationale for Elimination of Groundwater Options: All options eliminated from consideration should be explained.

Page 2-50, Table 2-11: Ex-situ vapor extraction is retained as an option. This process should have been screened out as an option or included as a potential alternative. Text should indicate why it was eliminated from further consideration.

Page 3-1, Section 3.0 This section does not address disposal of groundwater or soils.

Page 3-2, Figure 3-1: An alternate water supply is indicated on the figure, however the text does not discuss this possibility.

Page 3-3, Section 3.1.1, Paragraph 2: It is inappropriate to state that "... no further remedial action would be taken." A more appropriate statement is "Under this hypothetical alternative, no

action would be taken." The purpose of this clarification is that the actions that have been taken thus far have been part of a treatability study.

Page 3-4, Paragraph 1: In this paragraph, it appears that groundwater will be monitored once every five years. In the last paragraph of this section, it appears that there will be annual costs for groundwater monitoring. How often will groundwater be monitored in the No Action alternative?

Page 3-4, Section 3.1.2: A further description of the existing North Remediation System (NRS) should be provided which indicates the volume and area of soil being treated, elements of the SVE, disposal of TCE removed from soil and the location.

Page 3-6, Paragraph 5: It appears that GAC is being considered more favorably than the other off-gas controls for Water Plant 2. Is this correct?

Page 3-7, Groundwater Containment: This section should specify that protection of the Memphis Sand is not provided. Contamination will continue to migrate off the clay into the Memphis Sand.

Page 3-7, Implementability and Cost: These sections should include groundwater monitoring requirements and potential costs.

Page 3-8, Paragraph 3: Photolysis oxidation is also being considered for off-gas control.

Page 3-8, Section 3,1,3: The volume and location of soil to be treated by SVE should be included in the discussion.

Page 3-11, Soils Treatment, Paragraph 2: The EPA guidance document Basics of Pump-and-Treat Ground-water Remediation Technology, EPA/600/8-90/003, March 1990, Table A-1, lists the Henry's Law Constant for trichloroethene as 9.10E-03 atm-m^3/mol. The text states the Henry's Law constant is 0.2315 (no units supplied).

Page 3-11, Groundwater: Water Plant 2 "has essentially" contained the plume, not "effectively." Also, Water Plant 2 does not prevent additional contamination from migrating into the Memphis Sand.

Page 3-12, Implementability and Cost: These sections should include groundwater monitoring requirements and potential costs.

Page 3-12, Section 3.1.4: A supplemental well(s) placed northwest of the manufacturing plant areas will not achieve the objective of preventing further contamination migrating into the Memphis Sands. The location and number of wells will be determined during RD and will achieve the objectives of assuring containment of the plume and preventing further contamination of the Memphis Sands. Figure 3-3 should be removed.

Page 3-14, Paragraph 3: A typographical error on line 2 - should be "... surface water, ..."

Page 3-14, Effectiveness of Alternative 4a: Please see above comment regarding Henry's Law Constant.

Page 3-15, Implementability and Cost: These sections should include groundwater monitoring requirements and potential costs. Also, photolysis oxidation and thermal treatment should be included as air pollution control equipment.

Page 3-15, Implementability and Cost: See previous comment.

Page 3-17, Section 3.1.7: The soil volume and location to be treated by LTTD should discussed in text.

Page 3-18, LTTD: The text should discuss the actual collection of the TCE in the LTTD unit and how this TCE would be disposed of or destroyed. Typical LTTD units do not provide temperatures sufficient to provide BDAT treatment of TCE.

Page 3-19, Effectiveness of Alternative 5: Water Plant 2 "has essentially contained the plume," not "effectively." Also, Water Plant 2 does not prevent contamination from migrating off the clay into the Memphis Sand.

Page 3-20, Implementability and Cost: This section should also include groundwater monitoring requirements and potential costs.

Page 3-20, Section 3.1.8: The soil volume and location to be treated by LTTD should be discussed in text.

Page 3-20, Section 3.1.8: Effectiveness and Implementability were not discussed.

Page 4-1, Section 4.0: This section does not address soil or groundwater disposal.

Page 4-1, Section 4.1, Paragraph 1 and 2: The detailed analysis should be based upon the requirements stipulated in the Nation Contingency Plan.

Page 4-7, Cost: Is there groundwater monitoring annually?

Page 4-8, Section 4.2.2: The second to last line of text contains a typographical error - "pitot" should be "pilot."

Page 4-11, Implementability: Are off-gas controls not necessary at Water Plant 2?

Page 4-11, Compliance with ARARs: The Memphis/Shelby Count Health Department (MSCHD) is not the enforcing agency for this site. It

is EPA's responsibility to ensure that the substantive requirements are met for ARARs.

Page 4-12, Overall Protection of Human Health and Environment: Water Plant 2 does not prevent further contamination at the clay pinch out.

Page 4-12, Supplemental Groundwater Extraction/Treatment: The number and location of supplemental extraction wells will be determined during remedial design.

Page 4-10, Long-Term Effectiveness: Contaminated shallow groundwater will continue to migrate into the Memphis Sands.

Page 4-15, Compliance with ARARs: The MSCHD is not the enforcing agency. It is EPA's responsibility to ensure that the substantive requirements are met for ARARs.

Page 4-16, Supplemental Groundwater Extraction/Treatment: Please see previous comments regarding the number and location of supplemental extraction wells.

Page 4-18, Compliance with ARARs: Please see previous comments regarding the MSCHD.

Page 4-20, Long-Term Effectiveness: Without operation of the supplemental wells, contaminated shallow groundwater will continue to migrate into the Memphis Sands.

Page 4-22, Compliance with ARARs: Please see previous comments regarding the MSCHD.

Page 4-22, Overall Protection of Human Health and the Environment: Water Plant 2 does not prevent further contamination of the Memphis Sands in the area of the clay pinch out and does not with certainty contain the plume.

Page 4-23, Groundwater: This section should be revised based upon previous comments regarding the number and location of supplemental wells.

Page 4-25: Please see previous comments regarding the MSCHD.

Page 4-26, Overall Protection of Public Health and Environment: There is no discussion of supplemental wells.

Page 4-29, Overall Protection of Public Health and Environment: Please see previous comment.

Appendix B: An evaluation of the remedial alternative costs was not possible because action-specific cost tables were not provided. Please provide these costs.

If you have any questions, please contact me at (404) 347-7791.

Sincerely,

Beth Brown

Beth Brown
Remedial Project Manager

cc: Jordan English, TDEC
Phil Coop, EnSafe